Pay to Throw: A New Way to Charge for Waste Disposal in the Philippines

A summary of EEPSEA Research Report 2004-RR4, Impacts of Unit Pricing of Solid Waste Collection and Disposal in Olongapo City, Philippines by Ma. Eugenia C. Bennagen and Vincent Altez, (Resources, Environment and Economics Center for Studies, Inc. (REECS), Suite 405, The Tower at Emerald Square, J.P. Rizal cor. P. Tuazon Sts., Project 4, Quezon City 1109, Philippines. Contact Emails: bennagen@skyinet.net; reecs@skyinet.net)

Across Southeast Asia, local governments have to dispose of mountains of domestic waste from the region's rapidly expanding towns and cities. As waste quantities have risen and disposal options have become scarcer, this task has evolved to encompass waste minimization and recycling. This, in turn, raises the question of how best to encourage households to reduce the amount of garbage they produce and throw away.

A new study from the Philippines has investigated a progressive way of charging for domestic waste management and has shown that it can provide incentives for waste reduction. The study was conducted by Ma. Eugenia C. Bennagen and Vincent Altez from the Resources, Environment and Economics Center for Studies, Inc. (REECS). It found that a unit-based waste pricing system – in which households are charged for waste disposal based on the number of containers of garbage they produce – led to a significant reduction in the quantity of garbage a community produced. The researchers also found that the new scheme (more popularly known as "pay-as-you-throw" or "pay-per-bag") could make waste disposal cheaper both for a community as a whole and for most of the households within it. In light of these findings, Bennagen and Altez describe how the scheme could be adopted in communities across the Philippines.

Would Pay-Per-Bag Work?

The study was undertaken because so little information was available about how unit-based waste pricing for households would operate in developing countries – despite positive findings for such schemes in many developed countries, including the US. This information gap existed because, in the Philippines, the unit pricing of garbage collection and disposal is not widespread. Where it is practised, it is almost always applied to the commercial or business sector. In fact, very few local governments in the country charge households any fees for garbage collection. Those that do charge the fee as part of an annual property tax or as a flat monthly charge.

Bennagen and Altez's study was done in Olongapo City. Currently, the City operates a flat garbage fee regime, which has been in place since 1989. Seventy-two households were randomly drawn from the city's high-density areas. These households had all participated in a prior socio-economic survey, with a larger sample, that the researchers had used to get background information for their study.

Weighing The Evidence

In practice, under a unit pricing program, households are charged per container of garbage set out for collection by the service truck. Since it was not practical to do this during the study, the research team conducted a trial or experiment in which the participating households were instead offered a cash incentive per bag of garbage reduced. In addition, all households were given a small payment as an incentive to take part in the trial.

The participating households in the trial were divided into two groups and each group was subdivided into two smaller groups. The amount of waste they generated and disposed of was collected and weighed twice a week by the research team. The households were provided with colour-coded plastic bags and trash cans to make the scheme easy to use. The cash incentive per bag (which was a proxy for the price per bag) was varied across groups and was increased twice during the latter part of the trial in order to observe the behaviour of the participating households to the price changes.

The reference unit price against which the trial prices were set was P 6 per bag. This is the estimated amount needed to fully cover all costs of collection and disposal (including environmental costs). The estimate was based in part on the full cost accounts of the Environmental Sanitation and Management Office (ESMO), the group that handles solid waste management in the city.

Waste Bins Empty and Recycling Picks Up

The researchers found that households, on average, reduced the total wastes they generated by 90 grams a day while the experiment was underway - a reduction of 6%. The reduction in the quantity of non-recyclable wastes or the wastes that they put out for collection was larger – 210 grams a day or a reduction of 24 %. Toward the end of the survey, a subset of the households were interviewed to find out how they had responded to the new waste collection charges. Although a few households admitted that they had burnt their garbage or disposed of it illegally, such cases were not widespread. An analysis was also done of the factors that had affected households' responses to the price changes. Not surprisingly, the price charged for waste disposal affected the weight and volume of waste put out for collection.

Scheme Benefits City

Based on the results of the experiment, it was calculated that unit pricing – if implemented across the city – would result in a 3,305 ton annual reduction in the amount of waste that Olongapo City would have to dispose of. In the short run, only variable costs, which account for 25-30% of total costs, would be avoided with this shift to a unit pricing system. Given current waste collection and disposal costs of PHP 929 per ton, it was calculated that this would translate into avoided costs of about PHP 920,000 annually in the first three years. In the longer run, when more

investment decisions could be affected, the city could save as much as PHP 3.1 million annually in solid waste management costs.
As in any policy reform, there would be winners and losers in the short term from the implementation of unit pricing in Olongapo City. In this case, the winners would be those households that already produced little waste or that managed to reduce their waste output significantly. The new disposal costs of these households would be less than the flat fee they would have paid under the old flat-rate system. The experimental data indicated that, if the scheme was introduced, there would be more winners than losers – by a ratio of about 6:4.

A Scheme for the Future

These findings suggest that shifting from the existing flat fee structure to unit pricing of solid waste in Olongapo City would enhance waste minimisation and recycling and create overall welfare gains.

A wide range of possibilities are available for the exact nature of the fee. City officials have expressed a preference for a two-tier system, in which households would pay continue to pay a flat fee of P 40-50 per month. This will entitle the household to put out no more than two small bags of waste per collection data free of charge. Any additional bags would be subject to a charge of P 6 each, payable through the purchase of stickers to be affixed to the additional bags. The two-tier system has the advantage of providing the city with a more stable and predictable flow of revenue than would a system based entirely on "pay per bag". At the same time, it provides an incentive to households to keep waste to no more than two bags per collection day. In time, as the city gains experience in administering the fee, the fixed element of the charge might be eliminated and a 100% pay-per-bag system implemented.

To implement such a system successfully, the residents of the city would have to be convinced that the new program would be fair and that the City government would be able to check and stop any illegal waste disposal. The researchers therefore recommended an aggressive information campaign to gain public support for the new pricing system.

….And for the Country

Bennagen and Altez believe that their findings should be transferable and could provide ideas for municipalities around the Philippines – especially ones as progressive as Olongapo City – in their solid waste management programs. As demonstrated by the study, these communities could use unit pricing scheme as a tool to meet their waste diversion targets, promote recycling, and achieve other solid waste-related environmental goals.

PHP 55 = 1 USD (March 2004)